



**6TH ANNUAL
JOINT AEROSPACE WEAPON
SYSTEMS, SUPPORT,
SENSORS AND SIMULATION (JAWS S³)
SYMPOSIUM & EXHIBITION**



**“MAKING INFORMATION WORK FOR
THE WARFIGHTER”
21ST CENTURY INFORMATION
OPERATIONS**



**26-30 JUNE 2000
ADAM'S MARK HOTEL
SAN ANTONIO, TEXAS
EVENT #092**

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Making Information Work for the Warfighter

(The Joint Aerospace Weapon Systems, Support, Sensors and Simulation Symposium - JAWS S³)

— JAWS S³ 2000 —

San Antonio, Texas

June 26 –30, 2000

Come be part of the solution, join with other leaders from Government, Industry and Academia focused on the R&D, T&E, logistics and maintenance, C4ISR, resource management, warfighter operations, and other requirements that are accelerating the development of sensors, electronics, and battlespace environmental technologies.

JAWS S³ 2000 symposium provides the opportunity to:

- Participate, network and interact with policy makers, senior executives, analysts, and technical experts as you address topics from information operations to technology development; and from computer simulations to combat operations.
- Explore what Government and Industry are doing to practice acquisition reform to field affordable, reliable, maintainable, and technologically superior systems.
- Address the emerging threats of asymmetric warfare, weapons of mass destruction, and cyber warfare while examining ways to protect critical infrastructures in the defense and civilian sectors.
- Identify and assess the “right” technologies for defense interests.

Information technology is critical to maximizing today’s warfighter effectiveness.

The JAWS S³ 2000 symposium provides the gateway to achieving DOD’s *Joint Vision 2010* mission of attaining a new higher level of combined operations capability through the premise of modern and emerging technologies, particularly information operations advances. The symposia provides the opportunity to talk, listen, think about issues in different ways, share solutions, present lessons learned, and network with other professionals while exploring new defense technologies. The symposium concludes with a classified US-only session addressing issues unique to DOD, and an open discussion on issues and recommendations moving forward.

For more information and an up to date agenda visit the JAWS S³ 2000 website at www.jawswg.hill.af.mil. Take an opportunity to register for this symposium by completing the enclosed registration form. Mail or with with your payment to NDIA, or visit the NDIA web site at www.ndia.org. If you have any questions, please do not hesitate to call NDIA at (703) 247-2578 or e-mail ecurry@ndia.org. We look forward to seeing you in San Antonio, TX.

Dr. Asha Varma
Naval Air Systems Command
Chair, JAWS S³ 2000

JAWS S³ 2000 Committee

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Naval Air Systems Command

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Ms. Kira Migliore

Exhibit Hours

Monday, June 26
1700-1900

Tuesday, June 27
1000-1830

Wednesday, June 28
1000-1330

MONDAY, 26 JUNE 2000

- 1500-1900 Registration
- 1700-1900 Opening Reception in the Exhibit Area

TUESDAY, 27 JUNE 2000 (Texas Ballroom C)

- 0700 Continental Breakfast (Grand Foyer, Second Floor)
- 0800 Call to Order and Symposium Opening by Joint Symposium Chairs
Dr. Asha Varma, *Naval Air Systems Command*
Mr. William Swart, *Joint Information Operations Center and Air Intelligence Agency*
- 0810 Welcome
Maj. Gen. Bruce "Orville" Wright, USAF, *Commander Air Intelligence Agency and Joint Information Operation Center*
- 0820 Key Note Address
Gen. Larry D. Welch, USAF (Ret.), *President, Institute for Defense Analyses*
- 0915 **PANEL I: THE EMERGING THREAT AND MEETING WARFIGHTER CHALLENGES IN 2010 AND BEYOND**
Chair: Dr. Douglas Sticht, TACAIR EW Integrated Product Team Lead, Naval Air Systems Command, Research & Engineering Group

Members: Dr. Dan Kuehl, *National Defense University*
Mr. J. Paul Nicholas, *Senior Analyst, Government Accounting Office*
Mr. Benjamin, P. Riley, *Special Assistant to Technical Director and Director of ACTD Program, Office of the Chief of Naval Research*
Mr. Ronald S. Oxley, *President & General Manager, Emergent Information Technologies Inc*

This panel addresses the emerging threat of weapons of mass destruction (WMD), internal and external terrorism and rogue nations threats against American national security. The interactions of these threats on the infrastructure and battlefield will be addressed. The panel will focus on strategies that will lay a common framework for action to connect, protect, guard against, or reduce existing vulnerabilities. This panel will also review how DOD can work more closely with other federal agencies to counter and minimize the threat. The panel consists of senior military personnel with extensive experience in battlespace management requirements for information operations. The 21st century commanders, at all levels, require accurate and timely knowledge of the disposition of friendly and enemy forces, the status of all weapons and combat support systems and the ability to rapidly task battlefield surveillance and target acquisition systems. To accomplish this they require assured access information to sustain a continued flow of operations; real time characterizations; and the need for protection, prevention, and negotiations in this process.

- 1015 Break in Exhibit Area
- 1025 Panel Continues
- 1220 -1330 Lunch in Rose Garden

TRACK A, SESSION I
Performance Improvements/
Threats
(Executive Salon 1)

Chair: **Dr. Mien Wann, Naval Air Systems Command, Research & Engineering Group, Patuxent River, MD**

1330 The NATO Artillery Ballistic Kernel
P. Beck, *U.S. Army TACOM/ARDEC, Picatinny Arsenal, NJ*

1400 Target Acquisition Weather Software (TAWS) and Night Vision Goggle (NVG) Operations Weather Software (NOWS)
R. Bensinger and P. Tattelman, *Litton-TASC, Reading, MA*

1430 Air to Surface Weapon Simulation
R. Orgusaar, V. Nguyen & K. Min, *U.S. Air Force Research Laboratory, Eglin AFB, FL*

1500 Break in Exhibit Area

TRACK A, SESSION II
Performance Improvements/
Threats

Chair: **Mr. William Freeman, Naval Air Systems Command, Research & Engineering Group, China Lake, CA**

1530 Broad Band High Resolution Linear FM Direction Finding System
W. Freeman and J. Piri, *Naval Air Warfare Center, China Lake, CA*

1600 Military Applications of Coherent Random Noise Radar Technology
R. Narayanan, *University of Nebraska, Lincoln, NE*

1630 Scene Alterations from Induced Clutter and Artifacts
J. Nealon, *U.S. Army Research Laboratory, APG, MD*

1700 Chaotic Behavior in Software
J. Schaff, *Naval Air Systems Command, Research & Engineering Group, Patuxent River, MD*

TRACK B, SESSION I
Maintenance/Logistics
(Executive Salon 3)

Chair: **Mr. Bill Schilling, Washington Institute of Technology, Washington, DC**

1330 Enhancement of System Test and Evaluation from Birth to Battlefield through Technology Integration with Maintenance Test and Training
L. Su, M. Nolan and C. Holcomb, *U.S. Army Test, Management and Diagnostic Equipment Activity, Redstone Arsenal, AL*

1400 How to Execute an Effective Software Safety Program across IPT - A Case Study
J. Gill, *Naval Air Warfare Center, Patuxent River, MD*

1430 Prognostics Framework, A Software Development Tool
L. Su, M. Nolan, B. Norman and G. deMare, *U.S. Army Test, Management and Diagnostic Equipment Activity, Redstone Arsenal, AL*

1500 Break in Exhibit Area

TRACK B, SESSION II
Maintenance/Logistics

Chair: **Mr. Paul Faas, Air Force Research Laboratory/HESR, WPAFB, Base OH**

1530 Advanced Diagnostics for USAF Legacy Aircraft
F. Stoll, M. Craft, P. Vincent, and P. Faas, *University of Dayton Research Institute, Dayton, OH*

1600 Passive Aircraft Status System
P. Faas, C. Botello and G. Wittlinger, *Air Force Research Laboratory/HESR, WPAFB, OH*

1630 The Role of Bayesian Networks in Autonomous Systems
K. Blemel, *Management Sciences, Inc., Albuquerque, NM*

TRACK C, PANEL II
Penetrating Information
Operations And Network
Protection
(Executive Salon 5)

1330-1730
1500 Break in Exhibit Area

Chairs:
Dr. Ken Lima, Naval Undersea Warfare Center, Newport, RI

Mr. Larry Merritt, Technical Director, Defensive Information Operations, Fort Meade, MD

Members:
Mr. John Ballard, *Technical Director, Information Operations, SPAWAR Systems Center, San Diego, CA*

Col Larry Huffman, *Chief of the DISA Global Network Operations Center*

Lt Col Joe Squatrito, *USAF, Chief, Information Operations (CND/A) HQ USSPACECOM/J39C*

Mr. J. Michael Kretzer, *Air Force Information Warfare Command, AAFIWC/CA, San Antonio, TX*

Dr. John McHugh, *CERT Coordinator Center, Software Engineering Institute*

Mr. Frank Heidt, *Senior Partner, @Stake, Inc.*

Mr. Mudge, *Vice President of Research & Development, @Stake, Inc.*

Mr. Ted Poe, *Federal Business Group, Network Associates (PGP Industries)*

The Panel will bring together principals from the services, NSA, private consultants with members of the hacking community to discuss network/information security. Discussion will focus on the vision of the services regarding network centric warfare, potential vulnerabilities of the network, the extent and kind of penetration we can expect, info warfare, and approaches to deal with network attacks. Panel will also try to focus upon the vulnerability of domestic infrastructure to attacks on financial, transportation and communication systems and how to safeguard or reduce the disruptive effect of such attacks.

Tuesday, June 27
1730-1830
Networking Reception
in Exhibit Area

WEDNESDAY, 28 JUNE 2000
(Texas Ballroom C)

0700 Continental Breakfast (Texas Ballroom, Second Floor)

0800 Call to Order

0810 **PANEL III: IDENTIFYING AND ASSESSING THE RIGHT TECHNOLOGIES**

Chairs: Mr. Larry Hollingsworth, *Head, Mission and Sensor Systems, Naval Air Systems Command, Research & Engineering Group*
Dr. David Farber, *Chief Technologist at FCC and Professor at University of Pennsylvania's Computer and Information Science and Electrical Engineering Department*

Members: Dr. Joseph Mackin, *Lincoln Laboratories, Massachusetts Institute of Technology*
Mr. Ed Swallow, *Vice President of Advanced Programs, Emergent Information Technologies*
LTC Bruce L. Gwilliam, Ph.D., *USA, Acquisition Corps, Office of Deputy Under Secretary of Defense, Science & Technology (ODUSD(S&T))*

For industry, cost, functionality and time-to-market are the drivers. These factors are negatively impacted by security. This panel will address trends for DOD to determine the size, type and specific payoffs for DOD R&D investments in selected security technologies. Emphasis will reinforce the necessity to keep security current with advances in network speed and bandwidth, penetration testing, red teaming and using operational environments identified to evaluate new technology concepts and approaches.

1005 BREAK in Exhibit Area

1025 **PANEL IV: BUILDING THE ANALYTICAL BRIDGE BETWEEN THE WARFIGHTER AND THE ENGINEER**

Chair: Mr. James F. O'Bryon, *Deputy Director, Operational Test and Evaluation, Office of the Secretary of Defense*

Members: Dr. Paul Deitz, *Technical Director, Army Materiel Systems Analyses Activity*
Mr. Bruce Powers, *Head of Navy Strategic Requirements Analyses for Chief of Naval Operations*
Mr. Jack Sheehan, *Defense Consultant on Modeling & Simulation*

This panel provides insights into the assessment processes impacted by acquisition reform and the increased roles of modeling and simulation in the acquisition process. The focus will be on how evaluation methods link the flow of information between the warfighter and the systems designer. The first bridge is from the warfighter to the designer, as to what measures of merit and performance are desired in a given system. The second bridge, from the system designer back to the warfighter, provides the relative incremental penalties and benefits in cost and/or performance that are derived from incremental changes in the required performance measures. Also included will be a special report on emerging Modeling and Simulation (M&S) trends of military operations research from the previous week's MORS Conference as well as a synopsis of the recently completed DOT&E/LFT&E sponsored survey of M&S supporting acquisition programs.

1215 LUNCH in Rose Garden

**TRACK A, SESSION I
Chem/Bio Weapons of Mass
Destruction and Obscurants
(Executive Salon 1)**

Chair: Mr. Steve Federle, *Air Force Research Laboratory/MNM, Eglin AFB, FL*

- 1330 Standoff Chemical Agent Detection in an Urban Environment
R. Bensinger, *Litton TASC*
- 1400 Biological Agent Detector
J. Kiel, J. Parker, E. Holwitt, M. Sloan, P. Mason, J. Alls and H. Gifford, *Air Force Research Laboratory/HEDB, Brooks AFB, TX*
- 1430 WMD and DataBase Support for Counter Terrorist Operations
W. Schilling and L. Schneider, *Washington Institute for Technology, Washington, DC*
- 1500 Break

**TRACK A, SESSION II
Chem/Bio Weapons of Mass
Destruction and Obscurants**

Chairs: Dr. Roger Davis, *Science and Technology Corporation, Las Cruces, NM*
Ms. Jan Breedan, *U.S. Army National Guard Intelligence Center, Charlottesville, VA*

- 1530 The Joint Simulated Total Obscuration Results Model (JSTORM) Update
R. Davis, *Science and Technology Corporation, Las Cruces, NM* and J. Breedan, *U.S. Army National Guard Intelligence Center, Charlottesville, VA*
- 1600 SERPENT - An Agent Defeat Weapon Effectiveness Assessment Tool
B. Keith and V. Smith, *ITT Industries, Colorado Springs, CO*
- 1630 Unintended Consequences: Obscuration and Precision-Guided Munitions
J. Nealon, *U.S. Army Research Laboratory, APG, MD*
- 1700 Pulsed Electromagnetic Radiation Biological Agent Detector
J. Kiel, J. Parker, E. Holwitt, M. Sloan, P. Mason, J. Alls and H. Gifford, *Air Force Research Laboratory/HEDB, Brooks AFB, TX*

**TRACK B, SESSION I
Maintenance/Logistics
(Executive Salon3)**

Chair: Dr. Lipi Su, *U.S. Army Test, Management and Diagnostic Equipment Activity, Redstone Arsenal, AL*

- 1330 PREDICT: Performance and Reliability Evaluation with Diverse Information Combination and Tracking
J. Booker, *Los Alamos National Laboratory*
- 1400 Smart Aircraft Wiring for In-situ Prognostic Health Management
K. Blemel, *Management Sciences, Inc., Albuquerque, NM*
- 1430 The Role of the Internet in Condition-Based Maintenance
K. Blemel, *Management Sciences, Inc., Albuquerque, NM*
- 1500 Break

**TRACK B, SESSION II
Engagement Simulations
(Effectiveness)**

Chair: Dr. Craig Ewing, *Air Force Research Laboratory/MNG, Eglin AFB, FL*

- 1530 Network Centric Warfare RDT&E Network of the Future
C. Johnston, *Naval Air Warfare Center Weapons Division, China Lake, CA*
- 1600 SmartSensor Web
LTC Bruce L. Gwilliam, *USA U.S. Army Acquisition Corps*
- 1630 Advances in Hardware-in-the-loop Testing at AFRL's KHILS Facility
R. Murrer, Jr., *U.S. Air Force AFRL/MNGG, Eglin AFB*
- 1700 PC Based Real-Time Architecture for Integrated Digital Simulation (PC-RAIDS)
C. Ewing, *U.S. Air Force Research Laboratory/MNGG, Eglin AFB, FL*
- 1730 Simulation Tools for HLA Integration Support
W. Veitch, *Virtual Prototypes Inc., Oklahoma, City, OK*
- 1800 Ballistic Missile Defense Simulation Support Center (BMD SSC): Capabilities, Status Architecture and Availability
J. May, C. Bang and E. Herup, *Joint National Test Facility, Shriever AFB, CO*

**TRACK C - PANEL V
Information Operations
Technologies
(Executive Salon5)**

Chair: Mr. Jim Price, *Information Operations Corporate Business Development, SPAWAR Systems Center, San Diego, CA*

In this session discussion focus will be on both technology requirements and developments in response to those needs. A "big picture" view of the needs for IO technologies will be presented. Users will provide the perspective on the tools they have today and those that they need tomorrow, especially in the area of information assurance. Operational experiments and exercises with new capabilities will be presented. R&D community representatives will discuss the directions they are taking to provide future capabilities.

- 1330 "Big Picture" IO Needs and Capabilities
Mr. Lawrence Wright, *Booz Allen & Hamilton; Head, Defense Science Board IO Task Force*
- 1400 The IO Center for the Future: A Bridge Between the R&D Community and Operators
Dr. Robert Kolb, *Executive Director, SPAWAR Systems Center, San Diego, CA*
- 1430 Evaluation of IO Technologies
Col M. Nichols, *USAF, Air Force Information Warfare Battlelab*
- 1500 Break
- 1530 IO-Related Advanced Concept Technology Demonstrations (ACTDs)
Ms. Sandra Vasile, *Air Force Information Warfare Center, San Antonio, TX*
- 1600 IO Experimentation and Technology Transition
CAPT Kevin Morrissey, *USN, Naval Air Warfare Development Command*

THURSDAY, 29 JUNE 2000
(Texas Ballroom C)

- 0700 Continental Breakfast
- 0800 Call to Order
- 0805 Keynote Unified Command Address
VADM Herbert A. Browne, USN, *Deputy Commander-in-Chief, U.S. Space Command*
“Attaining Information Superiority for the Warfighter”
- 0855 Keynote Service Address
Brig Gen John L. Wilkinson, USAF, *Mobilization Assistant to Director of Intelligence, Surveillance and Reconnaissance, Deputy Chief of Staff, Air and Space Operations*
“Air Force Programs for Information Superiority”
- 0945 Break
- 1015 **PANEL VI: INDUSTRY AND REVOLUTIONARY CHANGES IN TECHNOLOGY**
Chairs: Mr. Lawrence Wright, *Booz Allen & Hamilton; Head, Defense Science Board IO Task Force*
Mr. Ronald S. Oxley, *President & General Manager, Emergent Information Technologies Inc*
- Members: Dr. Stephen Cross, *Director, Software Engineering Institute, Carnegie Mellon University*
Mr. Ed Swallow, *Vice President of Advanced Programs, Emergent Information Technologies*
Dr. Dave Hitz, *Co-Founder, Chief Technology Officer, Network Appliance, Inc.*
Mr. Dennis McLain, *Vice President, DoD Sun Federal Systems*
- This panel will provide feedback from industry on issues addressed by the previous panels as well as address issues such as the level of trust, risk management, and the total system performance responsibility. DoD acquisition reform directly affects industries’ developing products and services. The former relationship of customer and supplier is rapidly evolving towards partnering industry to become an active participant.
- 1215-1330 Lunch in Rose Garden

THURSDAY, 29 JUNE 2000

TRACK A, SESSION I Simulation-Based Acquisition/ Acquisition Reform (Executive Salon 1)

- Chair:** **Mr. Arman Tchoubineh, Naval Air Systems Command, Weapons Division, Point Mugu, CA**
- 1330 What's Wrong with Software Test Plans?
G. Daich, *Software Technology Support Center, Hill AFB, UT*
- 1400 Enabling Technologies Needed for SBA
P. Eirich and J. Kester, *Johns Hopkins University, Applied Physics Laboratory, Laurel, MD*
- 1430 Commercial UAV Operations in Civil Airspace
N. Newcome, *Adroit Systems, Inc., Alexandria, VA*
- 1500 Break

TRACK A, SESSION II Simulation-Based Acquisition/ Acquisition Reform

- Chair:** **Dr. James Coolahan, Johns Hopkins University, Applied Physics Laboratory, Laurel, MD**
- 1530 A Simulation Based Acquisition Collaborative Environment for Strike Warfare
J. Coolahan, *JHU/APL, Laurel, MD*
- 1600 Collaborative Environments for the 21st Century Warfighter
W. McQuay, *U.S. Air Force Research Laboratory, WPAFB, FL*
- 1630 Close Air Support (CAS) Munition Program
J. Wolverton, *AFRL/MNAV, Eglin AFB, FL*
- 1700 Determination of Military Value for a Space Based Radar
T. Laine, K. Phillips & M. Lewis, *Air Force Materiel Command/Office of Aerospace Studies, Kirtland, AFB*

TRACK B, SESSION I Engagement Simulations (Effectiveness) (Executive Salon 5)

- Chair:** **Dr. Kenneth Lima, Naval Undersea Warfare Center, Field Team Operations, Newport, RI**
- 1330 Source Code Overlay Editor (SCOE)
T. Risko, *Naval Air Systems Command, Research & Engineering Group, Patuxent River, MD*
- 1400 The Foundation Initiative 2010: The Foundation for Test and Training Interoperability
G. Hudgins, *BAE Systems*, G. Rumford, *U.S. Army White Sands Missile Range*, M. Vuong, *U.S. Army Simulation, Training, and Instrumentation Command*
- 1430 Smart Target Model Generator
R. Dukes and D. Watts, *Air Force Research Laboratory, Munitions Directorate, Eglin AFB*

1500 Break

TRACK B, SESSION II Engagement Simulations (Effectiveness)

- Chair:** **Dr. German Chavez, Teledyne Brown, Madison, AL**
- 1530 BMC3I Assessment Tools
J. Spruill and G. Chavez, *Teledyne Brown, Madison, AL*
- 1600 ADS & Distributed Testing for T&E: What You Need to Know
A. Tchoubineh, *Naval Air Systems Command, Pt. Mugu, CA*
- 1630 Scenario Generator for Terrorist Threats
M. McDonnell and W. Schilling, *Washington Institute of Technology, Washington, DC*

FRIDAY, 30 JUNE 2000

CLASSIFIED - NO FORN

- 0700 Breakfast on Own
Buses depart Adam's Mark Hotel for Kelly Air Force Base
- 0730 Security Check-In (Juice & Coffee)
- 0800 Call to Order and Administrative Remarks
Mr. William Swart, *Deputy Commander, Joint Information Operations Center*
- 0805 Welcome
Brig. Gen. Carol Elliott, USAF, *Deputy Commander, Air Intelligence Agency and Joint Information Operations Center*
- 0820 **PANEL VII - INFORMATION OPERATIONS: TURNING PROMISES INTO ACTIONS**
Chair: Mr. William R. Swart, *Deputy Commander and Technical Director, JIOC and Symposium Co-Chair*
- Members: Brig. Gen Carol Elliott, USAF, *Deputy Commander, Air Intelligence Agency*
"Cyber Warfare"
Mr. Richard Shiffrin, *OSD General Counsel*
"Legal Authorities and Restrictions"
Dr. John Yurechko, *Defense Intelligence Agency, SIO (Invited)*
"Future of Intelligence Support to Information Operation - DIA View"
Mr. Bill Marshall, *Director, Information Operation Technology Office*
"Techniques and Tools"
Mr. Steve Stigall, *CIA Information Operations*
"Foreign Threats and DoD's Information Infrastructure"
Ms. Pamela Alexander, *Chief, Information Warfare Team, CIA*
"The Threat"
- 1050 Break
- 1100 Views from the Hill: Senator Robert Bennett (Invited)
- 1200 "CYBER WAR" - Capt. Stephen Barish, AFIWC/IOT
- 1230 Summation by Mr. William Swart
- 1300 Buses depart for Adam's Mark Hotel
- 1300 Executive Lunch by Invitation

The JAWS S³ 2000 Committee would like to acknowledge the following individuals for their support:

Mr. A. Bruce Allgood
Lt.Col. Stanley J. Jarzombek, Jr., USAF (Retired)
Director, Computer Resources Support Improvement Program (CRSIP) (Acting)

Maj. Gen. John R. Baker, USAF
Director, Joint Requirements
Headquarters U.S. Air Force
Pentagon

Mrs. Marlene K. Blemel
President, Management Sciences, Inc.
Albuquerque, NM

Dr. Adarsh Deepak
President, Science & Technology Corporation
Hampton, VA

Dr. Joseph Janni
Director, Air Force Office of Scientific Research (AFOSR/AFRL)
Arlington, VA

Dr. Jasper Lupo
Director, Sensor Systems
Office of Deputy Under Secretary of Defense, Science & Technology
(ODUSD(S&T))
Pentagon

CAPT Michael L. Noble, USN
Naval Air Systems Command
Patuxent River, MD

Mr. James F. O'Bryon
Deputy Director, Operational Test & Evaluation/Live Fire Test & Evaluation
Office of the Secretary of Defense
Pentagon

COL Edward W. Newing, USA
Commander, US Army Environmental Center
Aberdeen Proving Ground, MD

Dr. Clifford E. Rhoades, Jr.,
Director, Mathematical and Space Sciences (AFOSR/AFRL)
Arlington, VA

Dr. Fred E. Saalfeld
Deputy Chief of Naval Research and Technical Director
Office of Naval Research
Arlington, VA